The Formation and Tactics of Caesar's Army

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Formation and tactics of Caesar's army.

The Formation and Tactics of Caesar's army.

We possess no history which treats directly on the Roman army in the time of Caesar. Polybius, a Greek historian of the second century before Christ, has given us in his history quite a complete account of the Roman army of his day. Vegetius' treatise on military art refers of course to a period much later than that of Caesar, being as he was a historian of the latter part of the fourth century; yet many details given by him are valuable illustrations of Caesar, as war customs had considerable permanence among the Romans. Then too we gain points now and then from Tacitus, who, although somewhat later than Caesar's time, was still much earlier than Vegetius.

Much of our knowledge, however, of Caesar's army must be obtained from the first-hand evidence taken from his own works, the civil and gallic wars. As his commentaries are, primarily, a narration of his wars, but often by his accuracy of statement, a

truly commendable characteristic of Caesar, we are able to glean much regarding the formation and tactics of his army.

The tactical unit of a Roman army was the legion. Caesar obtained his recruits for the most part from levies made from those provinces over which the people at Rome had been induced to make him proconsul. In B.G. 1-7 he makes a levy in Transalpine Gaul. In B.G. 1-10 he makes a levy of two legions in Cisalpine Gaul, and in B.G. 2-2 makes a similar levy from this same province. The exact manner of mustering soldiers is given by Polybius as follows; "When the consuls (corresponding to the proconsul of a province) are about to enroll an army they give public notice of the day on which all Roman citizens of military age must appear. On the day appointed, the fourteen junior tribunes divide themselves, in the order in which they were appointed by

the people, into four divisions, to make the primary division of the forces thus raised is into four legions. This division of tribunes having been made, & the tribunes of the several legions take up a separate position and draw lots for the tribes one by one; and summon the tribe on which it from time to time falls. From this tribe they select four young men, as nearly like each other in age and physical strength as possible. The tribunes of the first legion pick out one of them, those of the second another, and the fourth takes the last. With the next four the tribunes of the second legion have first choice, and those of the first last, and so on in rotation; & which the result is that each legion gets men of much the same standard.

The physical requirements of a recruit (Veg. I-VI). were quick eyes, muscular shoulders, a broad chest, strong arms, long fingers, a slender body, shin legs with sinewy calves and feet. The height for a legionary (Veg I-V) was six

feet (Roman) or at least five feet ten inches. If however necessity demanded, the question of strenght was of more importance than height. Undoubtly the manner of recruiting done by Caesar did not conform in detail to that recorded by Polybius, yet from the account we get some idea of the method used.

One of the most perplexing questions relative to the legion is its actual numerical force when full. The number given by Polybius is 4200 or at times of special danger 5000. Livy speaks of a legion with as many as 6000 men. Even in Caesar we find the legion varying materially in number. In B. Gallum Civile III-88 we find Pompey's army composed of 110 cohorts and the number of soldiers 45000. With ten cohorts to a legion, we estimate 4090 men for each legion. But in the following chapter, (89) in speaking of his own forces, he says there were 80 cohorts in line, composed of 22000 men, making his legion but 2750 strong. In B.G. 5-49 when coming to the rescue of Cicero, Caesar speaks of his two

legions as scarcely 7000 strong, which would give 3500 men to a single legion. We cannot err greatly if we leave the number at 4500 although this may be rather large. Caesar's legions would naturally by incessant fighting diminish in the number of men contained in each. Yet there is no reason to believe that the legions under Pompey, with the exception of the two legions treacherously obtained from Caesar, had for any cause been weakened.

The legion of Caesars time was divided into ten cohorts. We have clear evidence of this from a passage in Bellum Civile; "Caesaris triplex (acies); sed primam aciem quattuor cohortes [tenebant] ex quinque legionibus tenebant; has subsidiariae ternae et rursus aliae totidem suae cuiusque legionis subsequebantur". Vegetius also plainly states that in every legion there were ten cohorts. Taking 4200 as the average strength of the legion, the cohorts would be composed of 420 men.

The division into maniples far preceeds the time of Caesar.

Polybius states that the legion was divided into thirty maniples and that two centurions were appointed to each maniple. In the new organization of the legion by Marius into cohorts, the maniple would naturally be the third of the cohort. We know that this division of the cohort into three maniples was in effect in the time of Caesar by his reference to the centurions just over them. In B.G. 2-25-8 he speaks of a centurion as primipilo, which refers to the 1st centurion of the 1st maniple of the first cohort. In B.C. 3-64 he says that all the centurions were killed except a "principem priorem", i.e., the 1st centurion of the second maniple. A. Tulginius, in B.C. 1-46 is called "primi hastati", the first centurion of the third maniple. There was, since the time of Marius no real distinction between hastati (formerly spearmen), principes, (the men of more robust bodies and age), and the triarii or pili (the veteran soldier of tried bravery); but the nomenclature was retained to classify officers. Thus the ~~hastati~~, pili, principes, hastati, although

men with the same arms and armor, came to designate the first, second, and third manipules, respectively. Aulus Gellius, in his Noctes Atticae 16-4-6, quoting from a certain Cincius says: "Item in libro sexto hoc scriptum est; in legione sunt centuriae sexagintae, manipuli triginta, cohortes decem. This would be further evidence for us, were it not for the fact that Cincius, the man quoted, seems to refer to the famous historian in the times of the Punic wars, mentioned several times by Livy. As we know the cohort division was not known at that time, the evidence seems of no importance. Still we must not lay too much stress on the ~~proposition~~ fact that he was the L. Cincius Alimentus of Livy, since the name Cincius was the name of a Roman gens. This passage gives us grounds, also, for the division of the manipel into centuries.

The officers of an army were the military tribunes, the legates and the centurions. There were six of the former for each legion.

Caesar's military tribunes were often chosen for political or family reason rather than proved military efficiency. B.G. 1-39. "Hic (Titius) Fabium ortis a tribunis militum, praefectis reliquisque, qui ex urbe amicitiae causa Caesarem secuti non magnam in re militari usum habebant. The probability is that these men attached themselves to him for personal gain and that in giving them commissions, he was simply paying his political debts. They were not much valued by Caesar, although there are numerous instances where they commanded in actual battle.

The more important duties performed by the tribunes in the regular Roman army were transfered by Caesar to the legati. He recognized the inability of the tribunes and in the latter part of the Helvetian war placed a legatus over each legion. We find eighteen different persons who served in this capacity in Gaul. They were seemingly not assigned to permanent commands and undertook no independent

operations. One of the duties generally left the legatus was the oversight of a legion in winter quarters while Caesar was absent. In B.G. IV-38, Labienus is sent with two legions to march against the Morini; which shows that trusts of considerable import was sometimes given them. A similar commission is given to Labienus against the Venelli, etc.

The quaestor, in addition to his usual duties of providing for the payment and provisioning of troops and the general financial matters connected with a campaign, was often given the command of a legion by Caesar. When not on a campaign, he took charge of the receipts and expenditures of the province and assisted the proconsul generally in its government.

The centurions were the real officers of the legion. There were sixty in a legion; six for each cohort or two for each maniple. They rose through appointment by the tribunes or commander. From the expressions primipilus, princeps prior, hastatus primus,

we should expect some such title as pilus posterior, princeps posterior, hastatus posterior, given to the second centurions of the various maniples, but we find no such nomenclature in Caesar. We shall however use these names in attempting to show the order of the centurion's rank throughout the legion.

As to the relative rank of the centurions in a cohort, there seems to be little doubt but that the pilus prior was the highest officer, while the hastatus posterior was the lowest. But when we come to consider the relative rank of a centurion in one cohort with that in any other, we are confronted with a difficult problem. The difficulty arises from the fact that we have no definite or positive information on the subject, and at best we can only obtain isolated and vague references from which quite as vague theories have been formed, and no doubt will still continue to be formed.

From such expressions as primorum ordinum (B.G. I-41 - II-30 - VI-7)

and octavis ordinibus, we must infer that the centurions were divided into classes according to rank. In the Annals of Tacitus we find the following; occisi sex primorum ordinum centuriones.

From these expressions we obtain at least two requirements to which any theory must agree.

1st. We must infer from the expression "ab octavis ordinibus" that there were at least eight classes, with the possibility of more.

2nd From Tacitus we must understand that there were at least six centurions of the first class.

We gain some knowledge of considerable importance from Vegetius. The passage is as follows; "Nam quasi in orbem quemdam per diversas cohortes et diversas scholas milites promoventur, ita ut ex prima cohorte ad gradum quemlibet promotus veniat ad decimam cohortem et rursus ab ea crescentibus stipendiis cum majore gradu per alias recurrat ad primam. Ades primi pili centurio, postquam in orbem omnes cohortes per diversas administraverit

scholas, in prima cohorte ad hanc
permit Palaecam, in qua ex
omni legione infinita commoda
conseguatur; etc.

From these words Rüstow
devolves some such meaning:
when a cohort became diminished
through loss of men, the vacant
ranks were supplied from men
of the next lower cohort. Thus the
recruits would be found in the
10th cohort while the best men of
the legion would be found in
the first cohort. When for any
reason there was need of a
centurion, he was chosen from
the common soldiers of the first
cohort and was given the position
of hastatus posterior of the tenth
cohort. He would then pass through
the different positions of the cen-
turions of this cohort until he
became pilus prior, when his next
promotion would be to that of
hastatus posterior of the ninth. Thus
he would pass through each
succeeding cohort, until he
reached the position of primipilus.

As regards the classes, he
devises the following plan. The
centurions of each cohort form

a class. Thus for each legion there would be 10 classes, each composed of six centurions. The (or) order of promotion was given above. This theory complies with the two necessary requirements, but seems so very impracticable. By this arrangement, not only the best trained soldiers but also the best officers would be brought together in the first cohort. Then too, those with the least discipline and experience would fall to the lot of the tenth cohort.

Lipsius a formidable argument against his theory seems to be the very words of Vegetius, a translation of which I give.

"For as it were in a certain circle the soldiers move forward through the various cohorts and colleges (scholas) so that from the first cohort, advanced to some grade, he goes through to the tenth cohort and again with increased pay from that (tenth cohort) on a higher grade he runs back through the others, to the first. Thus a centurion of the primus pilus, after he has served all the cohorts through the various colleges, in the first cohort

attains his highest reward, in which position he receives the greatest favors from the whole legion". The word scholas, translated colleges in the above passages, means, as I think, the Pili, principes, and hastati, each taken as one schola through the ten cohorts. According to Rüstow when once a centurion left the tenth cohort he never returns, which is contradictory to the language of Vegetius.

Another objection to the theory of Rüstow is, that the centurions primorum ordinum seem to have direct relation with the different cohorts. In B.G. 1-41, after a special gathering of all the officers of the army, the legions which had been thrown into a panic from fear of the Germans, treat with the tribunes of the soldiers and the centurions primorum ordinum in order to make apology to Caesar. It seems absurd to think that the soldiers of the other nine cohorts went to the centurions of the first cohort for such a service.

Evidently some different scheme must be arranged. From

the passages quoted above, we must grant that the centurions of the first rank were the pili priores, or leaders of the various cohorts; at any rate it seems much more natural that the soldiers of each cohort go to the commander for such a service as that mentioned in B.G. 1-41. If this be the first class, is it impossible to imagine that the principes priores form the second class, the pili posteriores the fourth, and the hastati posteriores the sixth? The order of promotion would then be as follows; when the hastatus posterior of the tenth cohort was advanced, he became hastatus posterior of the ninth, and so on in succession until he reached the first cohort. He would then return to the tenth cohort as princeps posterior. Passing through the various cohorts he would become a pilus posterior, after which, in turn, he would become a hastatus prior. The highest office to be held was the pilus prior of the first cohort, or primipilus, the height of a soldier's ambition. By this arrangement

however, we are reduced to six classes which does not fulfill the requirements of the passage cited from Bellum Civile. According to Polybius, each centurion selected a rear rank officer, who was called optio. We cannot be absolutely certain that such an officer did exist in Caesar's army, since no where in the Commentaries is he mentioned. Yet as he is mentioned by Polybius and again by Tacitus, we can say with a comparative degree of assurance that there was such an officer in Caesar's army. They were the assistants of the centurions and as their duty, no doubt, was quite the same as that of the centurions, we can see how they might have been called centurions. Thus instead of six classes, we would have twelve, which would explain B.C. 3-53.

There seems to be one rather weak point in the argument ~~and~~ which is that each optio according to Polybius was chosen by his own centurion and hence would

hardly be in the ranks of promotion. Festus, however, says; is adjutor (ref. to optio) dabatur centurioni a tribuno, which might seem to remove, to some slight extent, the objection.

On the whole, this theory seems to be far less objectionable than that given by Kinsler, in as much as it seems to explain in a much more satisfactory way the passage from Vegetius as well as the reference in B.G. 1-41. A little confirmatory evidence might still be added from a passage in Livy, where Sp. Ligustinus in an address to the soldiers relates how he was first centurion in the 10th maniple of the hastati, then in the first century of the first maniple of the same, next in the same post as regards the principes, and last, in the same as to the Triarii, i.e., primi pili centurio to the legion. This shows us that the advancement was through the whole line in a legion before passing to the next line. Still when we remember the class of soldiers of the three lines in the earlier wars,

and the absence of the organization by cohorts in the definite form which it took later, we can scarcely see how promotion could have been otherwise. The old organization, however, lasted until the time of Marius, but a half century before Caesar's time, and from all the evidence we can gather, there is no reason to believe that the general order of promotion was varied by the organization by cohorts.

Of the body guard, praetoria cohors, but little accurate knowledge can be learned. The expression occurs but three times in Caesar; twice in connection with the tenth cohort. In the Gallic War Caesar says that "even though no one else follows, still he will go with the tenth legion, which will be his body guard." By this reference we indeed assume nothing more than that they were troops of firm loyalty to him and that third is a mere compliment to them; not that the praetoria cohors was made up of choice legions. From B.G. 7-13, some conjecture that the cavalry there mentioned formed Caesar's body guard. This seems to be a rather far fetched inference, especially since they were Germans, and it is very probably that the body guard was composed of troops who constantly stood in near relation to the general — possibly the evocati; veterans past duty years, who served voluntarily.

Besides the legionary soldiers we find mention of the auxilia or auxiliares, the auxiliary forces, quite frequently in Caesar. They were of course in no case Roman citizens,

but were composed of foreigners and native provincials, usually armed with their national weapons and commanded by native officers. In Caesar's campaigns we find many tribes mentioned. The Numidians, the Gauls, Germans, Balearians, the famous slingers, the Cretan archers etc. The number would naturally vary as he conquered new nations. In the army sent to Spain, we find 6000? auxilia. Yet Caesar placed little confidence in these troops. In one instance we find them placed between the lines, seemingly as a precaution against flight. From B.G. 3-25 we are able to form quite an accurate estimate as to their value in an army; auxiliaresque, quibus ad pugnam non multum confidebat, lapidibus telisque subministrandis et ad aggerem cespitibus comportandis speciem atque opinionem pugnantium praebebant.

The cavalry of the days of Polybius was three hundred for each legion, selected by the censor on the basis of wealth from Roman

citizens. But in Caesar's army they seem to be made up exclusively of auxiliary troops. In the Helvetian war he had 4000, "selected from the whole province, the Aedueans, and their allies." In the seventh book he mentions the German cavalry of 400 which he had had with him from the beginning. In the fifth book he also speaks of a Spanish cavalry.

The cavalry was divided into squadrons, turmae, composed of about 30 men. Polybius says there were 30 men, Vegetius, 32 men. The estimate of 30 men for Caesar's squadron cannot be far from correct. The leader of the turma was the decurio, whose general duties and qualifications were the same on horse, as those for the centurion on foot.

The arms of a legionary were the sword and spear. Of the size of the sword we know comparatively little. From Livy we know what ghastly wounds could be inflicted with it. It hung from the right thigh, had an excellent point, could deal a formidable

blow with either edge, since the blade was stout and unbending.

The pilum, however, was the chief weapon used, the sword being used only when the enemy held out from the volley of spears (emissio pilorum). In the earlier wars the soldiers carried two spears, a heavy and a light one, but Caesar makes no mention of a second one. In the fifth book, where he mentions the rival exploits of two centurions, the language shows us plainly that Pullo carried but one spear. We get quite an accurate account of the pila from Polybius from which we can form some tolerably definite idea of the pilum of Caesar's day. He says, "Some of the pila are thick, some fine. Of the thicker, some are round with the diameter of a palm's length (2½ in), others are a palm square. The wooden shaft of them is about three cubits long (4½ ft) and the iron head joined to each shaft is barbed, and of the same length as the haft. Plutarch states that Marius contrived a new form for the fastening. Till then they used to fasten the shaft to the iron head with

two pins. But Marius leaving but one, had the other taken out, and a wooden key put in its place. By this contrivance he intended that when the javelin stuck in the enemy's shield, it should not stikk strait out; but the wooden pin breaking, and the iron pin bending, the shaft of the weapon should be dragged upon the ground, while the point stuck fast in the shield." This of course would render the shield useless, and unmanageable so long as the spear remained in it. Caesar also speaks of how he broke the phalanx of the Helvetians by this same device, so that many of them preferred to fight with unprotected bodies and threw their shields away. The pilum of Caesar was no doubt less heavy and clumsy than that described by Polybius, but his description is suggestive of the general make up of it.

The defensive coverings of the body were a coat of mail (lorica), a metal helmet (cassis), greaves (ocreae), and the shield (scutum). The

shield, four cornered and cylindrical, was two and a half feet wide and four feet long. It was made of boards firmly fastened together, and covered with leather; a rim of metal ran around the edges and added to its strength. In the center of its face was the boss (umbo), a protection of iron intended to cause missiles to glance off.

The tactics of the Army.

The tactical unit for operations was the cohort, since the men of any one cohort, as a rule, remained together. Authorities differ as to the amount of space taken up by each cohort. It seems very probable that the maniples were placed side by side, since if they were placed one behind the other, the distance for hurling the javelin would be much greater without any special gain. We have assumed 420 men to be the average number in a cohort, or 140 to each maniple. For marching purposes or hurling

the spear, three feet from man to man in rank seems quite sufficient. This also is in accordance with Vegetius. Granting that there were fourteen men in rank and a space of three feet for each centurion, we get an estimate of 144 ft (14 x 3 + 3 + 18), as the front of a cohort. Vegitius gives us to understand that there should be six feet between the ranks, in addition to one foot given to each man in which to stand, making a total of 17 ft. This seems entirely too great a space even for the use of the sword which will be spoken of later, and Vegetius, two, afterward qualifies his statement. Nam omnia expedit, ut conferti pugnent, quam longius separati: nam si minimum juerit acies tenuata, cito ab adversariis facta impressione perrumpitur et multum portea potest ere remedium. In the U.S. army, the breadth of a man is taken at 22 in. and his depth at 12 in. and there is a distance between ranks in column of march of 32 in. from back to breast or of 44 in.

from heel to heel. In line of battle, the distance from back to breast is 22 in., from breast to breast 34 in. In line of battle modern soldiers would naturally fight in closer ranks than the fashions on account of the nature of the weapons. A fair estimate as it seems would be four ft, about the distance given in Upton for column of march. Further evidence is furnished by Afr. 15:. Caesar here forbids his soldiers, when they were being wounded by the horsemen of the enemy, [not] to advance more than four feet from the standards. What reason would Caesar have for saying 4 ft any more than 6 ft or 3 ft. had not four feet some standard measure, which as we have said was no doubt the distance between ranks. Thus the cohort, under ordinary circumstance would be 144 x 40.

In B.G. 2-25 we find the expression "manipulos laxare, quo facilius gladius uti possent," from which we gather that more room was needed for the use of the sword than for the hurling

of the spear. Polybius demands six feet for this purpose, which Rüstow thinks must be a max imum. He makes an estimate of four ft. as being sufficient for this purpose. If we take the estimate of 6 ft. given by Poly., the march would be somewhat as follows: the line would advance in three ft order with intervals between the cohorts, equal to cohort front, and having thrust the javelin, would take the 6 foot space and fight with the sword, thus filling up these intervals.

There seems, however, sufficient proof to say that sometimes there were actual intervals at the time of battle. In B.G. 5-15 Caesar speaks of the cavalry and charioteers of the Britians dashing through a narrow space between the cohorts and retreating again in safety. Rustow says he cannot well think of an intervall in this case of less than from 75 to 100 ft, although Caesar calls it perexiguus. Then too the expression disponere cohortes occurs quite frequently, which may mean merely to set in order, or arrange, but

this compound would seem to indicate separation. The argument might be brought forward that this refers to the distance between the different lines. This cannot well be refuted, but still taken in connection with B.G. 2.25 (confertos milites sibi ipsos ad pugnam esse impedimento) it seems at least possible, in as much as we know that such was sometimes the case, as in Britain, to take it the other way as referring to the distance between cohorts in any one line. If we grant that this interval was equal to cohort front, the disposition of cohorts into three lines would well accord with it since the second line would stand opposite the intervals of the first, and of the third the second. Such an arrangement we know was used in the time of the Punic wars, but when we note that the line were some 150 to 200 feet apart, it seems scarcely probable that the distance was so great. The best explanation seems to be that there was an interval between cohorts of some 50

to >5 ft. Any space greater than this would seem to us, at least, impracticable, since the enemy coming on would rush between the cohorts, and attacking them on the exposed side, would have a great advantage.

(were some hundred and fifty feet back, completely demolish the first line before aid could be brought.)

The offensive formation of the legion was in two or three lines (acies duplex, triplex). Each legion was usually drawn up in the three line order, which consisted of four cohorts in the first line and three in each of the others. When for any reason it was necessary to extend the front of the army, the cohorts were arranged in two lines of six cohorts each. We have mention of one instance where a fourth line was made from cohorts detached from the third line, evidently designed to meet a flank attack, which however would more properly belong to the defensive.

The defensive formation of the legion was in one line (acies simplex), or in a circle (orbis). But one reference is made to the single line formation by Caesar, which took place in the African war against the great cavalry

force of Labienus. How
knew of a circle the orbis
was not do not know. We
have no account of any such
formation in either Polybius
or Vegetius. It was only used
against overwhelming numbers
as for instance, when the
Eburini attack the three hundred
soldiers on landing from
Britian; also at the departure
of Sabinus from winter-
quarters, when attack by the
Eburones. The probable explan-
ation is that the cohorts drew
up in what was the equivolent
to our hollow square, and
when thus formed, the term
orbis may have come from
flattening out the corners
of such a square for easier
defense.

A few words is all that
can be said with regard to
the tactics of the cabalry. The
conjecture that they were arrang-
ed in three lines in imitation
of the legions, can be nothing
more than a conjecture. Possibly
as accurate an account as
any, can be obtained from

the language in B.C. 3-93.

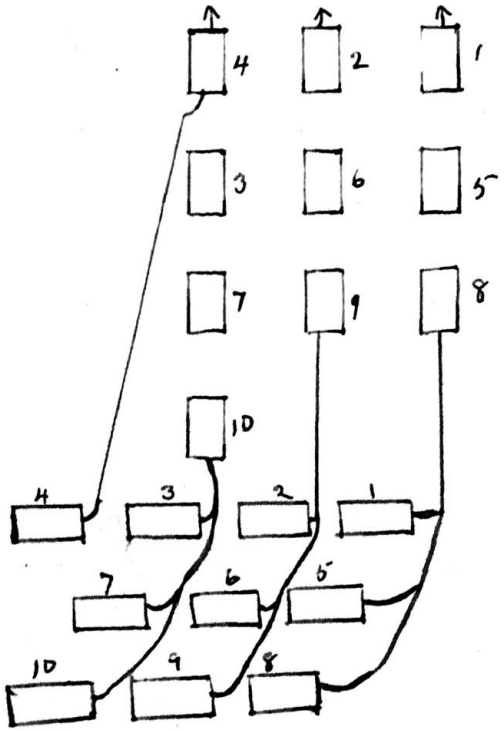
"Eodem tempore equites ab sinistro cornu Pompeii, ut erat imperatum, universi procucurrerunt, omnisque multitudo sagittariorum se profudit. Horum impetum noster equitatus non tulit, sed paulatim loco motus cessit, equitesque Pompeii hoc acrius instare et se turmatim explicare aciemque nostram a latere aperto circumire coeperunt." By this it would seem that the attack was in mass and only after rout had been made or at least a telling impression, did they separate into turmae. This was, no doubt, to pursue in different directions and follow up the scattered foe.

The line of march for the cohort was manipulatim, by columns of maniples, or centuriatim, by columns of centuries. The order of march could be easily formed by turning to the right or left as they desired to move. Thus the depth of the file, on facing right or left,

would then be the column front, i.e. 10 men. This front could be reduced in width from the battle order of 40 to 60 ft to that of marching order, 30 ft, by simply dressing the front rank infan; or by making each second century fall in behind the first, this distance could be reduced to 15 feet. This was called marching manipulation, which Caesar quite probably used, although the expression is not found in his commentaries.

The column of centuries, mention by Caesar in B.C. 1-76, was formed by the maniple on the right or left marching strait forward, followed in order by each succeeding maniple. In this order each cohort would march with its centuries in regular sequence. This column would have a front of 14 men, or a space of 45 feet (centurion 3 ft). This of course would be impracticable for a long march except in a very level country, since but few roads would accommodate so wide a column.

The legion, the ten cohorts combined, could march in line (acies instructa) or in a square (agmen quadratum). The march in line of battle is mentioned many times in Caesar. If the legion in three wishes to take ground to the right or left, it could do so by facing the whole body to the right and marching the three columns as far as desired. In the Civil War we learn of a march by column of wings formed directly from the line of battle. Thus the right wing would contain cohorts 1, 5, 8; the center 2, 6, 9; the left wing 4, 3, 7, 10.



March by column of wings.

I look up the agmen quadratum again. It is only mention by Caesar and Vegetius, which is cited. As was said another instance somewhat similar is found in Bks. 7 + 6?. In both these cases it was used when a sudden attack was expected. It seems to me to have been used similarly to the orbis.

The agmen quadratum seems to have been a defensive movement with some such purpose as that of the orbis, with the baggage in the midst for protection. Livy cites an instance where Hannibal draws up his legion in this form. A movement of some such a nature is recorded in the seventh book.

The days march was reckoned from camp to camp. (ex eo loco castris quintis Gergoviam pervenit). A days rest was customary after three or four days marching, at least a march of seven days without intermission calls for comment from Caesar. Each night or whenever halt was made, the camp was fortified.

The ordinary days march was from fifteen to eighteen miles, supposed to be done in five summer hours, about seven of ours. Vegetius says that the recruit was drilled to march 20 miles in five summer hours at the regular military step (militari gradu) for the same [illegible] at quick step (pleno gradu) twenty four miles in the same time. Farrow in

his Military Encyclopedia, states that the average march for infantry today is from 15 to 20 miles per day. The average Roman march (justum iter) is thus seen to have been no greater than that of modern days. The march was generally made from early morning (de tertia vigilia) and was probably ended soon after noon, (et plod magna parte diei consumenta munitioni castrorum tempus relinquum volebat), for the purpose of fortifying the camp. There were of course exceptional marches, and it goes without saying that the Roman army was subject to the same interruptions and delays as our own. Quite an extraordinary march is made by Caesar in the seventh book where he leaves Gergovia at daybreak to move against Litavicus - marched twenty five miles, attacks and makes him yield, marched back twenty five miles and reaches Gergovia the next day before daybreak. Crassus, when marching to join Caesar, who was moving to the rescue of Cicero, made a journey of 120 miles from mid-

night to nine o'clock.

The step, gradus, was 2½ Roman feet or one half pace (passus). We get this estimate from Pliny, who says that the "stadium is equal to 125 Roman paces, or 625 ft." Hence the pace will be equal to five ft. and the gradus, as given above. The Roman foot was about .971 of an English foot which make their "milia passuum" about 140 yards less than our English mile. If we grant with Ruston, that the four summer hours mentioned in Vegetius are equivalent to 6⅔ hours of our time, we get an estimate of 100 steps $\left(20000 \times 2 \div \left(60 \times 6\tfrac{2}{3}\right)\right)$ per minute for common time and 120 steps per minute for quick time. Farrow says that in the United States service the length of the direct step in common and in quick step is 28 in. measured from heel to heel: and the cadence is at the rate of 96 steps per minute for common time and 110 quick time. Of course we can not be very accurate or insist on conclusions since our estimate of the Roman hour can be but a mere conjecture. Still our estimate

cannot be far from true, seeing that both armies march about the same distance per day.

In the advance our must recognize three distinct divisions; the van guard (primum agmen), the army proper (exercitus, lets) and the rear guard (agmen extremum, novissimum) The van guard was composed of cavalry and light armed foot soldiers, whose purpose was to harass the rear of the enemy; also to learn the nature of the country and the journey of the enemy. Another duty of the van guard, in company with some centurions, was to select the site for the camp. The main body marched in a single column, cohort following cohort, in manipulation or centuration, and in battle order, according as the enemy were far or near, or the land through which they marched friendly or inimical. When not in the presence of the enemy the baggage of each legion accompanied it; in his presence the baggage was kept together, the main army being in front, then the baggage, guarded from behind by a strong rear guard.

The Battle

Caesar kept to the uniform habit of drawing up his legions on the gentle slope of a hill, so that they might have the advantage of the descent for casting the pila as well as for the rush upon the enemy. Vegetius also gives this advice and much other which any general would know to be to his advantage; such as, avoiding forests and marshes, keeping the sun to the back of his troops and precepts of a self evident nature. The cavalry was generally placed on the flanks of the legions, but sometimes on but one side. At the battle of Pharsalus, Caesar had his cavalry on the right, Pompey his on the left. It might be posted in the rear, as was the case at Bibracte, because it was not deemed reliable, and in the battle against Ariovistus because the enemy were protected on flank and rear by their wagons set up in defense, and cavalry against these was useless. The light troops, archers and slingers were placed on the wings to

resist flank attacks and we find frequent mention of their "inter equites", which would seem to favor the theory that there were intervals between the turmae. If time permitted, the general made an address, cohortatio to each legion in order to arouse their martial ardor, especially when there was a general fear of the enemy against whom they were going to fight. The utmost reliance was put upon the initiative, so as to make the first attack a telling one. The infantry, having reached the proper distance, which would not wind a man, [they] set out on a run to meet the foe. If the volley of spears produced sufficient gaps, falling to with the sword, the legionary would penetrate into them and have the enemy at his mercy. It sometimes happened that the enemy had come to close before the javelins were thrown, and in that case the soldiers used the sword at once. But this was rare, and the volley of spears usually preceded the

the use of the sword. The rush was usually made by one line at the same time. In Afr. 82, we find the cohort on the right wing brginning and the rest of the line taking it up. The first ranks were sustained in such a manner that there was a never ceasing motion in each cohort, as those who still held their jila in their turn advanced to hurl them. The second and third lines remained at a suitable distance in the rear, ready to support the front line. All the lines gradually came into action, the third however, used as it was for a reserve, was only used for the critical moment. We find but few defensive battles fought by Caesar, and only under the most favorable condition of the terrain. If possible the army backed on the camp, and gave the enemy only one approach, its front and up a slope. The camp of Caesar on the Axona, where he invited attack is a good example of this. If the enemy had attempted to cross the marsh, Caesar

could have charged upon them with decisive effect. The battle at Alesia was defensive, coupled with sallies, and here too the lay of the country was greatly in his favor.

Camp.

We do not know exactly how Caesar's camps were laid out. Polybius gives us an accurate description of the camp in the time of the Second Punic war. Vegetius, too, gives us a number of points concerning the camp of his day. Caesar had no definite number of auxiliaries, as was usual in the Punic wars, and the camp had to be constructed accordingly. Its general arrangement was what it had been for centuries. There were a number of points to be considered in its location; in summer to be near a good and wholesome supply of water; in winter a supply of grain and wood; for they used this latter not only for watch fires and cooking purposes, but also for various uses in fortifications. Whence

possible, the camp was pitched on high ground, so that its front had before it a portion of the slope and its rear lay on the summit (ab decumana porta ac summo jugo collis). The sight of the camp was selected by a camping party sent in advance under the command of centurions. But it is needless to say that the Romans camped where they must, if a good site was not at hand, they had to content themselves with one less desirable.

The general form was, no doubt, a square or rectangle, but if the nature of the place required, it might be semi-circular (castra flunata). Rüstow conjecture that this camp at Thapsus was but a series of rectangular camps, arranged in crescent form, seems to be too strained for exactity. At any rate in the time of Vegetius the camp could be square, round, triangular, or oblong, and there is little reason to doubt that Caesar modified his camp as the conditions of the land presented themselves, inorder to make it as secure

as possible.

An attempt will be made to give as accurately as possible the general lay of the camp with the helps available. One regrets to say that a very important book, the works of Hyginus De munitionibus castrorum, which gives us the camp in the time of the Empire, was not at our command.

The defences of the camp were the fossa and agger. It is difficult to determine the dimensions of the ditch (fossa). Vegetius gives two sizes. The top might be either 9 or 12 ft and the depth 7 or 9. For the customary fortification of camp, it seems probable that the dimensions were something like 9 x 7. Still Caesar mentions ditches of much larger dimensions. At the works at Alesia, the ditch was twenty feet wide. The agger was formed from the earth thrown inward from the ditch. Caesar mentions various heights for this wall and it varied as did the ditch. At the top was often placed the lorica, or a parapet of stakes placed close together. Its outer side was made perpendicular and [was] the earth was

kept in place by brush and hurdles.

Entrance to the camp was made through gates, probably 40 to 45 ft wide (multiple front). There were at least one on each side, that in front toward the foe being the porta praetoria; the one opposite, the porta decumana, also called porta quaestoria; those in the right and left sides, Porta principalis dextra, and porta principalis sinistra. We can scarcely doubt that the portae must have been always defended by barriers of some kind; but when special precaution were required, they were closed by regular gates, defended by towers (portes fores altioresque turres imponit). Entering the porta praetoria, the observer would see before him an open space two hundred feet in width around the whole camp. Room was thus given for moving troops to defend the walls, but the most important use of this space was to secure the tents from the danger of being set on fire, and keep the soldiers out of the range of the enemy's missiles. The space bounded by this avenue was divided into blocks

by streets. The principal of these were the via principalis, 100 ft wide, and the via quintana, 50 ft wide, which divided the whole camp into three parts. "Each of the segments had a name. The whole of the middle segment was called Latera praetorii. The segment included between the via principalis and that side of the camp in which the porta praetoria stood, formed the Praetentura. The segment included between the Via Quintana and that side in which the porta decumana stood, formed the Retentura". At the junction of the via praetoria, a street from the porta praetoria, and the via ~~Prin.~~ principalis, and extending back to the via quintana was an open space called the praetorium; here were the general quarters, the tribunal or elevated platform from which addresses were made to the troops, and the forum for the meeting of the soldiers. Back of the prfetorium was a similar space in the retentura, called the quaestorium, where were kept the hostages, prisoners, etc. in charge of the quaestor and his staff. The exact position assigned

to these places is conjectural; but they were, to say the least, in the immediate vicinity of these spots. The remaining space was portioned out according to a definite plan among the various divisions of the army and divided by smaller streets. But to assign a definite place for each cohort, turma, etc, at a time when the numbers in the army was constantly changing, as they were in the time of Caesar, seems to be a matter of conjecture rather than of any accurate knowledge. Each cohort occupied a space one hundred and twenty feet wide and one hundred and eighty feet deep, cut into six parts, one for each century. Josephus, in his account of the Jewish war, takes special notice of the Roman encampments, and although his observations do not go into detail, they are nevertheless a useful and corroborative supplement. He begins by saying that the Romans when [defending] invading an enemy's country, never hazard an engagement until they have fortified a camp, which in form

is a square, with four gates, one on each side. He added that if the ground is not even, it is levelled. The camp is divided conveniently by streets, in the middle are the tents of the officers, and in the very center of all is the generals own tent; also the market place, and seats for the officers, superior and inferior, where if any differences arise, their caused are heard and determined.

The permanent camp (castra stativa) was laid out much the same as the daily camp, but was more strongly fortified in every way. The walls were solidly built and fortified by rectangular works, placed at convenient distances (castella). In winter quarters barracks covered with skins and straw took the place of tents, as better protection to the occupants.

The Siege.

The walls of towns were generally of stones, and very high and thick. Many times, however, there were mere facings of stone with a filling of earth and rubble. To attack

the walls there was no artillery capable of making breaches. The ballistae were capable of throwing massive stones at great distances, but their force was not sufficient to break down the walls. To do this they must approach near the wall. The methods for capture were of three kinds, assault, blockade, or siege. Usually a wide and deep ditch, wet or dry, ran around the wall, and towers at regular intervals added to its strength. In the first method (oppugnatio repentina) the soldiers filled up the ditch, at points chosen by missiles, and fearing crossed set planted ladders (scalae) and mounted the walls. At the siege of Gomphi, Caesar in this summary manner took the town in about three hours (post horam nonam ---- ante solis occasum). But if the strength of the fortifications was such as to make an assault impracticable, the regular blockade (obsessio) was used. Strong redoubts (castella) were thrown up connected by a line of earthworks, the whole known as circumvallatio.

If there was danger of an enemy's army coming to the relief of the place, another line of circumvallation was drawn outside the besiegers' camp, facing outward to forestall and ~~x~~ attempt to raise the siege.

In the regular siege (oppugnatio), the principal work was the agger, a mound of timber work and earth, extending from the line of intrenchments toward the wall. These mounds were frequently of very great length and height. At the siege against Avaricum, the length was 330 ft and its height was 80 ft. It was not of this height the whole distance, however, since the agger was so constructed as to gradually increase in size until on a level with the top of the wall. Under a protection of this sort, mining could be carried on to a great advantage and the ditch filled up. Riistow conjectures its width to be some fifty feet, the width of a maniple. This again can be but mere guess work as we have no statement of certainty or even approximation

on this subject

The most of this work had to be done under fire, and means had to be devised for protection during its erection. For this purpose mantelets (plutei), and movable sheds (vineae, musculi) were constructed. The former were used by the men building the agger and the latter to bring material to the workmen, also to fill up ditches and to perform siege work in general. There were also movable towers, in the lower story of which was the battering ram, a beam from 60 to 180 ft long, ending in a mass of metal in the shape of a ram's head. The ram was also used frequently under a covered derrick called a testudo.

Josephus gives us a very interesting account of this machine, its effective power, and the various means used by the besieged to destroy its effect - a second wall, sacks of chaff, fire-brands to destroy its covering, etc.

In the upper stories of the towers were stationed sharpshooters, and

pieces of light artillery to drive defenders from the wall. Access was sometimes had to the top of the walls, across the ditch, by means of draw bridges attached to the turris. The tower was built so far from the besieged place as to be out of the enemy's reach and then pushed up to the walls by men stationed inside and behind it. It was accounted a very formidable machine of attack and was opposed in several ways; Vegetius speaks of undermining the ground over which the tower had to pass, so as to unset it. At Avaricum the height of the wall was increased and temporary wooden structures were erected on the wall.

A few word remain yet to be said about the artillery. Caesar called all missile throwers, tormenta, because they derived their propulsive power from twisted ropes, sinews, or hair. The catapultæ were huge bows, which shot horizontally, or at a slight elevation, large arrows, sharpened beams, fire darts, etc, at a great distance. The ballistæ were larger

than the catapults and hurled massive stones. It was in siege work, both attack and defense, that these engines were employed, particularly in defense. They were altogether too cumbrous to be used very extensively in the field and these only for the attack or defense of strong positions. The smaller catapults, called scorpiones, were probably used more in the field, and it appears that with these considerable precision of aim could be acquired. At New Carthage Scipio had 120 large catapults and 23 large ballistas. And Josephus says that the Jews at Jerusalem had 300 catapults and 40 ballistas. He also gives examples of the working power of these engines.

The Formation and
Tactics of Caesar's
Army.

C.A. Kattermann